

Date: Tuesday, 07/04/2009 10:22:28 AM  
 User: Julie Dawson

## Process Sheet

<b>Customer</b> :	CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> :	MID TUBE ASSEMBLY
<b>Job Number</b> :	46985		
<b>Estimate Number</b> :	10469		
<b>P.O. Number</b> :		<b>Part Number</b> :	D3391023
<b>This Issue</b> :	07/04/2009	<b>S.O. No.</b> :	
<b>Prsht Rev.</b> :	NC	<b>Drawing Number</b> :	D3391 REV H
<b>First Issue</b> :	//	<b>Project Number</b> :	N/A
<b>Previous Run</b> :	46984	<b>Drawing Revision</b> :	H
<b>Written By</b> :		<b>Material</b> :	
<b>Checked &amp; Approved By</b> :	JUD 09.04.07	<b>Due Date</b> :	27/04/2009
<b>Comment</b> :	Est. A 05.10.20 New Issue KJ/EC Est. B 06.02.10 ECN773 dwg rev.D EC est C 07.03.20 rev F dwg EC est D 07.03.28 re-format EC est E 07.10.31 ecn 1053P EC Est Rev:F ECN 1056 07-11-13 DD verified by: EC Est Rev:G 08-09-08 new process (ecn 08-510) DD verified by:EC Est Rev:H 08-09-10 revH as per dwg DD verified by:EC Est Rev:I 08-11-13 Removed steps per w/o, QC KJ verified by: ec		

SCRAP

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	D25001100	Skidtube Extrusion
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**Comment:** Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

SKIDTUBE EXTRUSION

Pick:

Qty	Part Number	Description	Batch
1	D2500-1-100	Extrusion	B24593

9-4-14

2.0	D3391021	Fwd Tube Assembly
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**Comment:** Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Fwd Tube Assembly

Batch: B 466416 D H 9-4-14

3.0	SKIDTUBES 1	SKIDTUBESS RESOURCE 1
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**Comment:** LANDING GEAR RESOURCE 1

1-Cut tube to finish length as per Dwg D3391

2-Identify as D3391-023

3-Drill pilot holes using DT8796 (Do not drill "B" holes) and drill only 1 fwd saddle hole on one side only as

9-4-14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: MID TUBE ASSEMBLY

Job Number: 46985

Part Number: D3391023

Job Number:



Seq. #:	Machine Or Operation:	Description :
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per Dwg D3391

4-Open saddles and GHW holes to Ø0.375" except for fwd saddle hole of detail "J"

5-Remove .030" from Fwd indexing Ridge as per Dwg D3391

6-Remove indexing ridge on Fwd & Aft end of skidtube as per Dwg D3391

7-Deburr

8-Drill #30 pilot holes using wearplate Jig DT8217 Identify Ø0.250" holes with paint marker,

9-Open wearplate holes of D3391-023 assembly detail section G-G to Ø0.250" (14 holes) as per Dwg D3391 and 2 holes in section Detail "J", do not open wearplate holes of section "J"

10-Open wearplate holes of D3391-023 assembly detail section H-H to Ø0.297" (20 holes) as per Dwg D3391

11-Open .375" holes to .438" \*\*\*do not open fwd saddle holes\*\*\*

12-Locate D3391-021 in D3391-023 at 9.00" (see view z-z)

13- Transfer drill one fwd saddle hole only to .188" dia, transfer drill all remaining fwd saddle holes using DT 8149 locating from previously drill .188" dia hole, using t-pins and clicos to ensure perfect allingment, open up previously tranfer drilled pilot holes in D3391-023/-021 to 0.438" dia. in D3391-021

14- Transfer drill 2 wearplate holes into D3391-021 using DT8217, locating from two previously drilled holes, drill remaining wearplate holes into D3391-021.

15- Locating from two fwd wearplate holes drilol remaining 6 wearplte holes in D3391-021 using DT8937

16- Open 2 fwd wearplate holes in D3391-023 to .250" dia.

17- counterbore two aft wearplate holes in D3391-021 as per dwg

18- Open 12 wearplate holes in D3391-021 to 0.297" dia.

19-Deburr and blow out all chips from inside tube

4.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

509/84/15 (40)

9-4-14

9-4-14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Job Number: 46985

Part Number: D3391023

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

RT 09-04-15

6.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

DM 9-4-15

7.0

D33891

Web



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEB

Pick:

Qty

Part Number

Description

Batch

1

D3389-1

Web

B 46258

DM 9-4-15

A/R

Sikaflex-241/-291

M111081

Sikaflex expire date:

0-1-1

Start: 9-4-15 Time: 4:10

Finish: 9/4/16 Time: 2:00AM

8.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Open float bag holes as per dwg

2-C'sink float bag holes as per dwg

3- Prepare tube for welding

4-Bond web in place as per Dwg D3391 & QSI 015.

Adhere for 12 hours)

RT 09-04-15

DM 9-4-15

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

8 09/04/16 (H)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Job Number:



Seq. #: Machine Or Operation: Description :

10.0 D36811 Spacer



Comment: Qty.: 5.0000 Each(s)/Unit Total: 5.0000 Each(s)

SPACER

batch: 46107

25 09-04-16

11.0 SKIDTUBES 1 SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Weld crossbolt spacer as per dwg D3391 & QSI 004

2-grind weld flush

11 09-11-16

BE 09/04/16 A/R M110972

12.0 QC10 VISUAL INSPECTION OF GROUND WELDS



Comment: VISUAL INSPECTION OF GROUND WELDS

S 09/04/16 (X)

13.0 QC5 INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 09/04/16 (X)

14.0 POWDER COATING POWDER COATING



Comment: POWDER COATING + pressure wash 09-04-28 x1 28

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

M110939

START TIME: 9:30

OVEN TEMPERATURE: 320°

FINISH TIME: 10:00

BR 09-04-28

(1)

15.0 QC3 INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

09-04-28

(X1)

16.0 D35911 Bushing



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

Bushing 1343172

11

09-04-28

(X1)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Part Number: D3391023

Job Number:



Seq. #:

Machine Or Operation:

Description :

17.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: SKIDTUBESS RESOURCE 1

✓ 1- insert D3391-021 into D3391-23

✓ 2- insert T-pins into first and third fwd saddle holes

✓ 3- ON FIRST SIDE ONLY drill out 2nd and forth fwd saddles holes to 0.500" as per DSI 9364

✓ 4- remove T-pins and locate DT9415 from first and third crossbolt hole using T-pins and clekos

✓ 5- ON 2ND SIDE ONLY ream out 2nd and forth saddle hole to 0.499". Remove DT9415

✓ 6- deburr, re-alodine and blow out chips

✓ 7- press fit D3591-1 spacers using DT9416 starting from 0.500" side

PTC

9/1 09-04-28 (40)

18.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

19.0

ALS41032130

Insert



Comment: Qty.: 22.0000 Each(s)/Unit Total : 22.0000 Each(s)

INSERT

batch: \_\_\_\_\_

or equivalent

per QSI 017

20.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Install Inserts as per Dwg

21.0

QC5



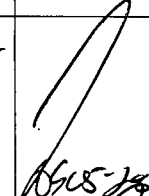
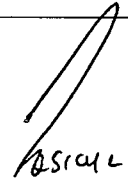
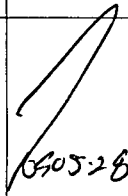

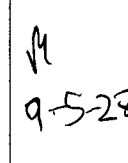
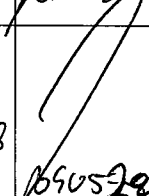

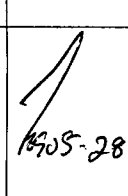
INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3391-023 PAR #: N/A Fault Category: Prod / <sup>Finishing</sup> Skid Steer NCR: (Yes) No DQA: D Date: 09/06/04  
 Resolution: SCRAP Disposition: SCRAP QA: N/C Closed: D Date: 09/06/04

NCR: <u>4685</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
09-05-28	17.0	Upon drilling (transfer) the 2 fuel most, fuel saddle holes are off center, and causes the saddle to stack up upon installation. A combination of an off center drilling, & even more after boring open the hole.		All hardware that was pulled for ASS'y has been placed back into stock. Mid? Fuel are affected & are scrap.	 09-05-28			
		R.c. Improper technique.		Destroy & de base See Attached e-mail. W/O 46646 D3391-021 is also scrap.	 9-5-28			

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Drawing Name: MID TUBE ASSEMBLY

Job Number: 46985

Part Number: D3391023

Job Number:



Seq. #:

Machine Or Operation:

Description:

22.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1  
Identify and Stock  
Location: \_\_\_\_\_

23.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



MF  
09-06-03

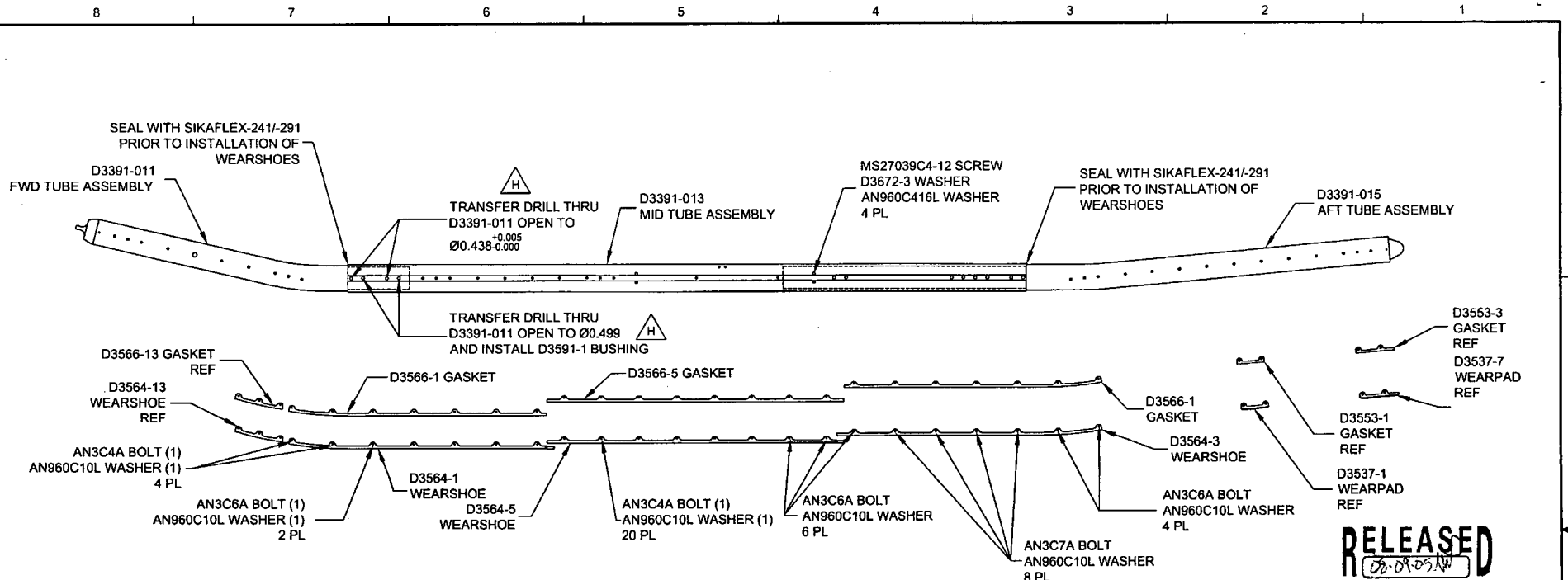
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



**D3391-041 ASSEMBLY**

**D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST**

QTY	PART NUMBER	DESCRIPTION
X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
2	D3566-5	GASKET
4	D3672-3	WASHER
24	AN3C6A	BOLT
12	AN3C7A	BOLT
6	AN3C4A	BOLT
44	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

**GENERAL NOTES**

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH  
AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH  
LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS  
OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES  
FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT  
WHERE INDICATED.

H	DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074)	AJS	08.08.20
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 1 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

NO. 1085  
SHIP COPY  
TO  
FOR  
NOTICE  
COPY  
AMENDMENT

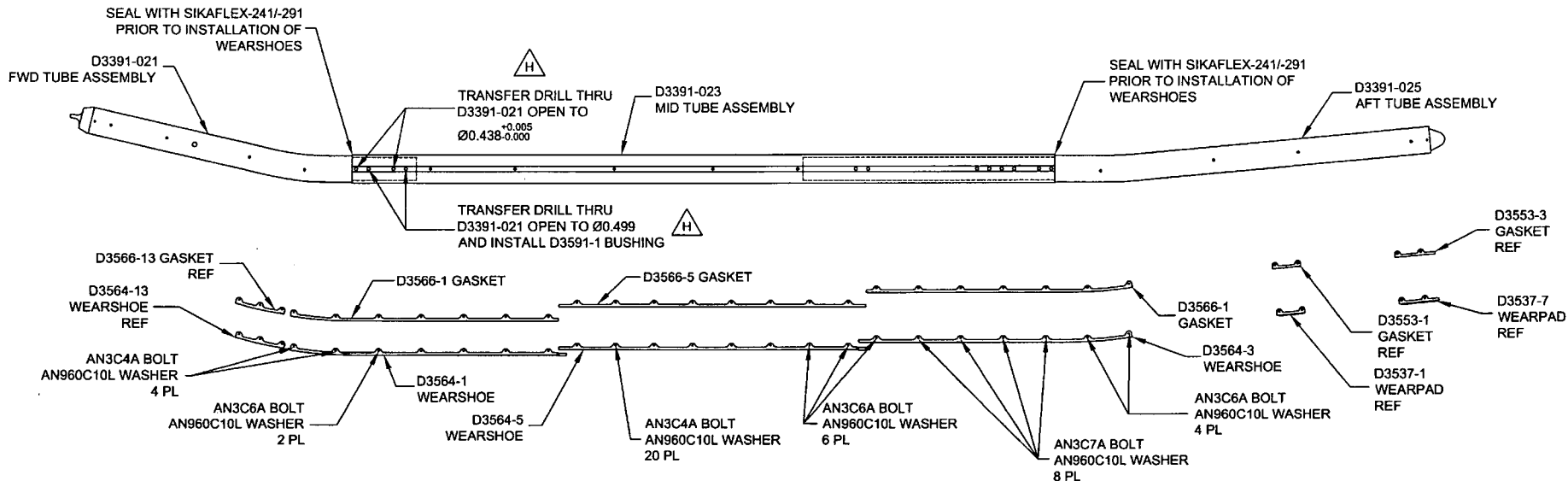
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



#### D3391-043 ASSEMBLY




#### D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
2	D3566-5	GASKET
2	D3591-1	BUSHING
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER

#### GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

**RELEASED**  
08-09-25/15

DESIGN	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 2 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC	
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NO 40985  
W/OUT NO. 10  
SUBJECT 891 AM 11-2001  
UNCONTROLLED COPY  
RETURN TO  
SHIP COPY  
15 SEP 2001

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

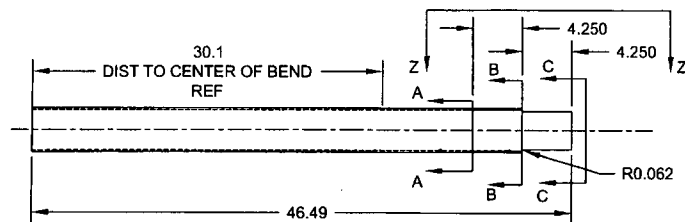
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

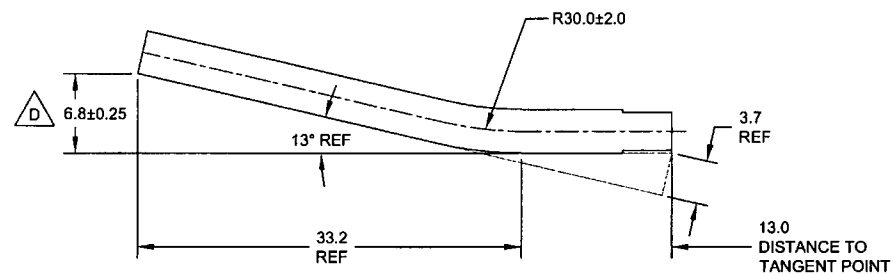
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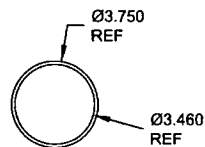




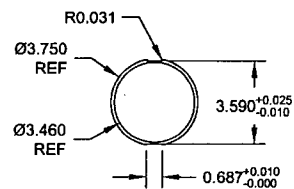
**D3391-1 CUTTING DETAIL**  
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



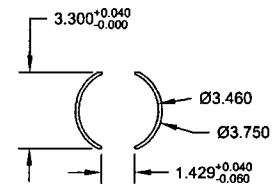
**D3391-011/-021 BENDING DETAIL**  
(MAKE FROM D3391-1)



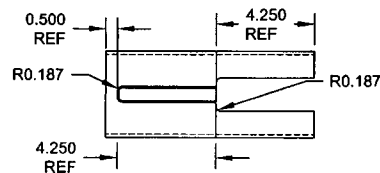
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**SECTION B-B**  
SCALE 2X



**SECTION C-C**  
SCALE 2X



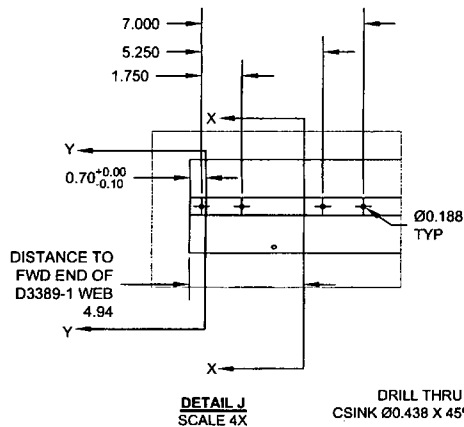
**VIEW Z-Z**  
SCALE 2X

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08-05-11

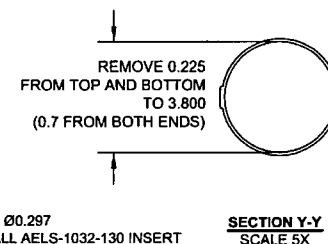
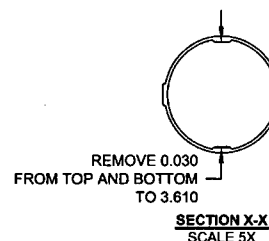
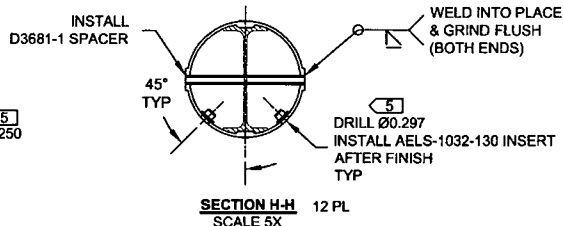
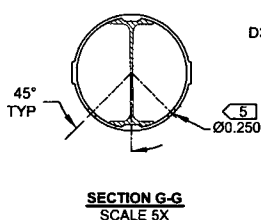
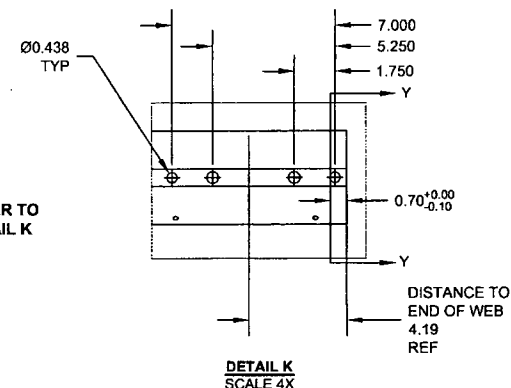
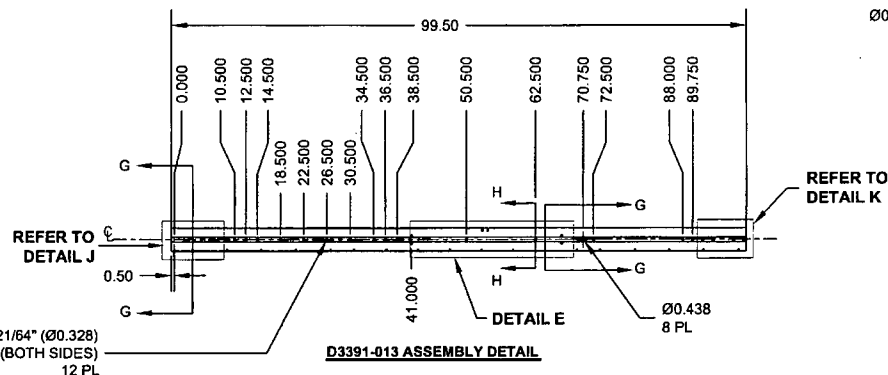
DESIGN	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED	J	DRAWING NO.	REV. H
MFG. APPR.	GC	D3391	SHEET 3 OF 8
APPROVED	AW	TITLE	SCALE
DE APPR.	AW	412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	<small>COPYRIGHT © 2005 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

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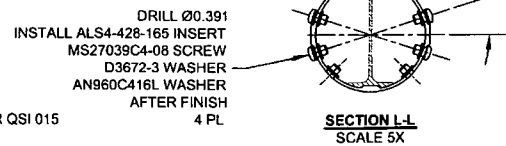
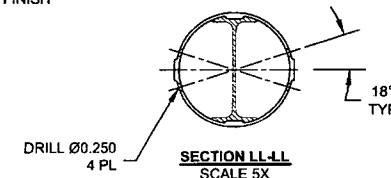
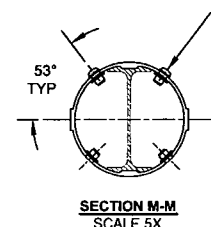
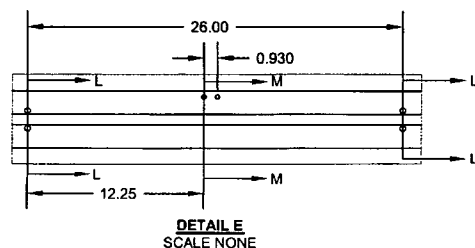


DRILL THRU 21/64" (Ø0.328)  
CSINK Ø0.438 X 45° (BOTH SIDES)  
12 PL



# **D3391-013 MID TUBE ASSEMBLY PARTS LIST**

QTY	PART NUMBER	DESCRIPTION
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW



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MFG. APPR.		D3391	SHEET 5 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
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## **D3391-013 MID TUBE ASSEMBLY**

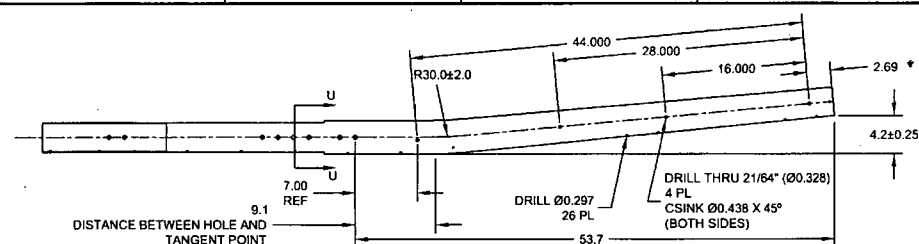
- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- 3) WELDING: PER DART QSI 004

NO. 1005  
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GENERAL

**RELEASED**

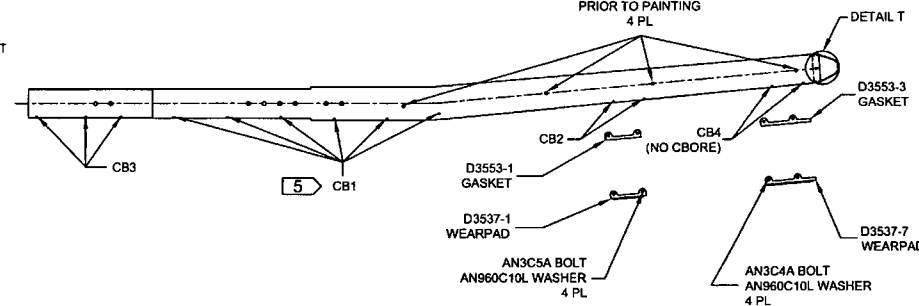






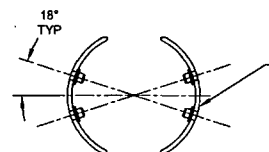
**D3391-025 BENDING AND DRILLING DETAIL**  
(SEE CBORE DETAIL BELOW)

INSTALL D3670-4200 SPACER  
SEAL WITH MAGNOBOND 6398  
GRIND FLUSH  
PRIOR TO PAINTING  
4 PL



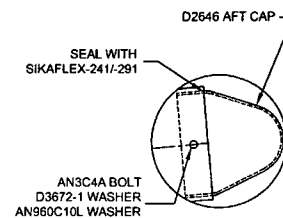
**D3391-025 ASSEMBLY AND CBQRE DETAIL**  
(SEE TABLE)

QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X		D3391-015	AFT TUBE ASSEMBLY
	X	D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2846	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
14	14	AELS-1032-130	INSERT
12	12	AELS-1032-225	INSERT
4		ALS4-428-165	INSERT
6	6	AN3CA4	BOLT
4	4	AN3C5A	BOLT
10	10	AN860C10L	WASHER



**SECTION CC-CC**  
**SCALE 3X**

DRILL Ø0.391  
CBORE Ø0.516 X 0.040 DEEP  
INSTALL ALS4-428-165 INSERT  
4 PL



**DETAIL T**  
**SCALE 4X**

RELEASE  
08-09-05 11/1

HOLES MARKED	QTY D3391-015	QTY D3391-025	CBORE	P/N
CB1	12	12	Ø0.430 X 0.170	AELS-1032-225
CB2	4	4	Ø0.430 X 0.170	AELS-1032-130
CB3	6	6	Ø0.430 X 0.040	AELS-1032-130
CB4	4	24	NONE	AELS-1032-130

DESIGN	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AJS	<b>PORT AEROSPACE, WA</b>	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. 1
MFG. APPR.	<i>[Signature]</i>	D3391	SHEET 8 OF
APPROVED	<i>[Signature]</i>	TITLE	SCAL
DE APPR.	<i>[Signature]</i>	412 FLOAT SKIDTUBE	NT
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NO. 183

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barclay Elliott  
Job number: 43170  
Part number: D3391023  
Description: Mid tube  
Welding Process: Tig[☒] Mig[ ]  
Base material: Aluminium  
Current: AC[☒] DC[ ]

TEST REQUIREMENTS AND RESULTS

Visual:  
Penetration:

pass[☒] fail[ ]  
pass[☒] fail[ ]

UNACCEPTABLE

Cracks:  
Undercut:  
Pin holes:  
Overlap (cold lap)  
Porosity (surface):  
Coloration:

pass[☒] fail[ ]  
pass[☒] fail[ ]  
pass[☒] fail[ ]  
pass[☒] fail[ ]  
pass[☒] fail[ ]  
pass[☒] fail[ ]

Qualifier Pat. Duval Date of Test Coupon 09-01-21

Welder Barclay Elliott Date of Test Coupon 07-01-21

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

## Jason Murdoch

---

**From:** Peter Hum [phum@dartaero.com]  
**Sent:** April 29, 2009 4:25 PM  
**To:** 'Jason Murdoch'  
**Cc:** 'Petsche, Mike'; 'L Lacelle'  
**Subject:** RE: Tri-beam

Jason,

I had a look at the tri-beam in finishing.....it seems like the holes on the outside of the skidtube are NOT concentric and that is what is causing the problem.....it seems like the holes are off by quite a bit....additionally, the saddle does not even bolt up probably....I would recommend a scrap since the fwd saddle is being preloaded because of the poor fit

Peter

---

**From:** Jason Murdoch [mailto:jmurdoch@dartaero.com]  
**Sent:** Wednesday, April 29, 2009 3:07 PM  
**To:** 'Peter Hum'  
**Cc:** 'Petsche, Mike'; 'L Lacelle'  
**Subject:** Tri-beam  
**Importance:** High

Hi Petey,  
If Mike doesn't mind.....I need you to have a look at a tri-beam in finishing. The Fwd saddle location has a bushing hole that is too high up on the ridge, and causes the saddle to become slightly jacked up upon installation. Not sure if this can any way possible be acceptable, but I would like your 2 cents on this. Please if you cannot today, come see me 1<sup>st</sup> thing in the morning before your training starts. These are for Fridays shipment.  
Thanks,

Jason Murdoch  
**Qc. Coordinator**  
jmurdoch@dartaero.com

30/04/2009